

## ATA DOS EXERCÍCIOS DIA 16/03/2005

1. A insulina humana é uma proteína formada por duas sub-unidades, chamadas A e B. Obtenha na Internet a seqüência de amino ácidos de cada uma destas sub-unidades. Qual é o tamanho de cada uma em resíduos?

Resposta:

- “proinsulin peptide B” - 30 resíduos

FVNQHLGSHLVEALYLVCGERGFFYTPKT

- “proinsulin peptide A” - 21 resíduos

GIVEQCCTSICSLYQLENYCN

2. Obtenha a seqüência de nucleotídeos do gene humano que gera a insulina. Ambas as sub-unidades são geradas pelo mesmo gene. Obtenha também as 100 bases que antecedem e seguem o gene da insulina. Em que cromossomo está localizado este gene? Qual é o seu tamanho em pares de base?

Resposta:

- O gene está localizado no cromossomo 11. O seu tamanho em pares de base é 1416;
- A seqüência de nucleotídeos do gene completo que gera a insulina é:

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GCTGCATCAGAAGAGGCCATCAAGCAGGTCTGTTCCAAGGGCCTTTGCGTCAGGTGGGCTCAGGATTCCA
GGGTGGCTGGACCCCAGGCCCCAGCTCTGCAGCAGGGAGGACGTGGCTGGGCTCGTGAAGCATGTGGGGG
TGAGCCCAGGGGCCCAAGGCAGGGCACCTGGCCTTCAGCCTGCCTCAGCCCTGCCTGTCTCCAGATCA
CTGTCCTTCTGCCATGGCCCTGTGGATGCGCCTCCTGCCCTGCTGGCGCTGCTGGCCCTCTGGGGACCT
GACCCAGCCGCAGCCTTTGTGAACCAACACCTGTGCGGCTCACACCTGGTGAAGCTCTCTACCTAGTGT
GCGGGGAACGAGGCTTCTTCTACACACCCAAGACCCCGCCGGGAGGCAGAGGACCTGCAGGGTGAGCCAAC
TGCCCATTTGCTGCCCTGGCCCGCCCCAGCCACCCCTGCTCCTGGCGCTCCCACCCAGCATGGGCAGAA
GGGGGCAGGAGGCTGCCACCCAGCAGGGGGTTCAGGTGCACTTTTTTAAAAAAGAAGTTCTCTTGGTCACT
CCTAAAAAGTGACCAGCTCCCTGTGGCCAGTCAGAATCTCAGCCTGAGGACGGTGTGGCTTCGGCAGCC
CCGAGATACATCAGAGGGTGGGCACGCTCCTCCCTCCACTCGCCCTCAAAACAAATGCCCCGAGCCCAT
TTCTCCACCCTCATTTGATGACCGCAGATTCAAGTGTTTTGTAAAGTAAAGTCTGGGTGACCTGGGGTC
ACAGGGTGGCCACGCTGCCTGCCTCTGGGCGAACACCCATCACGCCCGGAGGAGGGCGTGGCTGCCTG
CCTGAGTGGGCCAGACCCTGTGCGCAGGCCTCACGGCAGCTCCATAGTCAGGAGATGGGGAAGATGCTG
GGGACAGGCCCTGGGGAGAAGTACTGGGATCACCTGTTGAGGCTCCACTGTGACGCTGCCCGGGGCGG
GGGAAGGAGGTGGGACATGTGGGCGTTGGGGCCTGTAGGTCCACACCCAGTGTGGGTGACCTCCCTCTA
ACCTGGGTCCAGCCCGGCTGGAGATGGGTGGGAGTGCACCTAGGGCTGGCGGGCAGGCGGGCACTGTGT
CTCCCTGACTGTGTCTCTCTGTGTCCTCTGCCTCGCCGCTGTTCCGGAACCTGCTCTGCGCGGCACGTC
CTGGCAGTGGGGCAGGTGGAGCTGGGCGGGGGCCCTGGTGCAGGCAGCCTGCAGCCCTTGGCCCTGGAGG
GGTCCCTGCAGAAGCGTGGCATTGTGGAACAATGCTGTACCAGCATCTGCTCCCTCTACCAGCTGGAGAA
CTACTGCAACTAGACGCAGCCCGCAGGCAGCCCCACACCCGCGCCTCCTGCACCCGAGAGAGATGGAATA
AAGCCCTTGAACCAGC
```

- As 100 bases que antecedem são:

```
GCCCTAATGGGCCAGGCGGCAGGGTTGAGAGGTAGGGGAGATGGGCTCTGAGACTATAAAGCCAGCGGG
GGCCAGCAGCCCTCAGCCCTCAGGACAG
```

- As 100 bases que sucedem são:

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CCTGCTGTGCCGTCTGTGTGTCTTGGGGGCCCTGGGCCAAGCCCCACTTCCCGGCACTGTTGTGAGCCCC
TCCAGCTCTCTCCACGCTCTCTGGGTGCC
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